SMX SYSTEM MULTIMATRIX

MODULAR MULTI-PLANE MATRIX SWITCHER

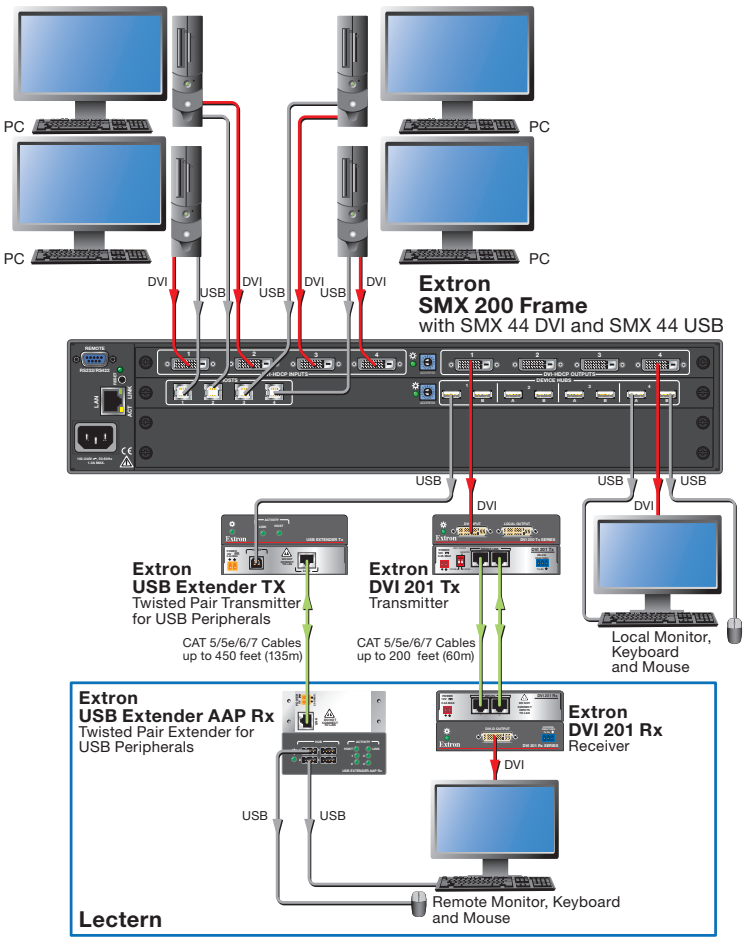
Truly modular, field-configurable matrix switching system

- Field reconfigurable and updatable card cage frame design
- Selection of matrix cards in most common signal types and I/O sizes:
  - DVI
  - HDMI
  - USB
  - 3G HD-SDI
  - Fiber Optic
  - Wideband RGB
  - VGA
  - S-Video
  - Composite Video
  - Stereo Audio
- RS-232 and IP Link® Ethernet control
- Redundant power supply available

Extron® Electronics
INTERFACING, SWITCHING AND CONTROL

Introduction

The **SMX System MultiMatrix** Series of multi-plane matrix switchers combines multiple, independent digital and analog matrix switchers in a truly modular, field-configurable frame. It supports up to 10 independent matrix switchers, all under a single point of control. The SMX combines the proven reliability and high performance of Extron's popular CrossPoint, MAV Plus, HDXP Plus, and MVX Series matrix switchers with the efficiency of a modular matrix switcher design. The SMX System is an ideal choice for medical imaging systems, conference and training facilities, and other mid-sized applications that require the switching of different signal types, a small footprint, and a cost-effective upgrade path for ongoing I/O or signal format changes.



The heart of the SMX System MultiMatrix is a field reconfigurable frame designed to facilitate the installation of new and replacement matrix switcher boards with a minimum of time and labor. The unique, hot-swappable card-cage design quickly aligns each matrix board on its own horizontal plane. Matrix boards can be installed without switcher disassembly, new firmware, or even the need to remove a previously installed SMX switcher from the rack.

SMX frames are available in four sizes: 2U, 3U, 4U, and 5U, providing four, six, eight, and ten matrix board slots, respectively. Simply select the frame and combination of digital, analog, wideband, and stereo audio boards that best fit the application. SMX matrix boards can be installed in any order. As A/V signal routing needs change over time, matrix boards can be added or changed to adapt the SMX to new system requirements.

SMX frames are also available with a redundant power supply for mission-critical applications. Power supplies are configured to automatically switch over to the spare, hot power supply in the event that the primary power supply fails, ensuring no loss of operation. SMX power supplies, internal operating temperature, and other key functions are continuously monitored by Extron's IP Link®, an integrated, high performance Web server that provides technical support personnel with the ability to receive critical service information via email through any authorized Web client.

In a conference center application, such as the one depicted below, A/V signal routing can require five or more separate matrix switchers - each with its own control panel and power supply. In addition to a large, complex A/V equipment rack, such a system design also requires a very complex control system, with a separate control port for each matrix switcher. With the SMX System MultiMatrix, these same, varied signal routing tasks can be consolidated, with one control point for the entire A/V signal routing system.

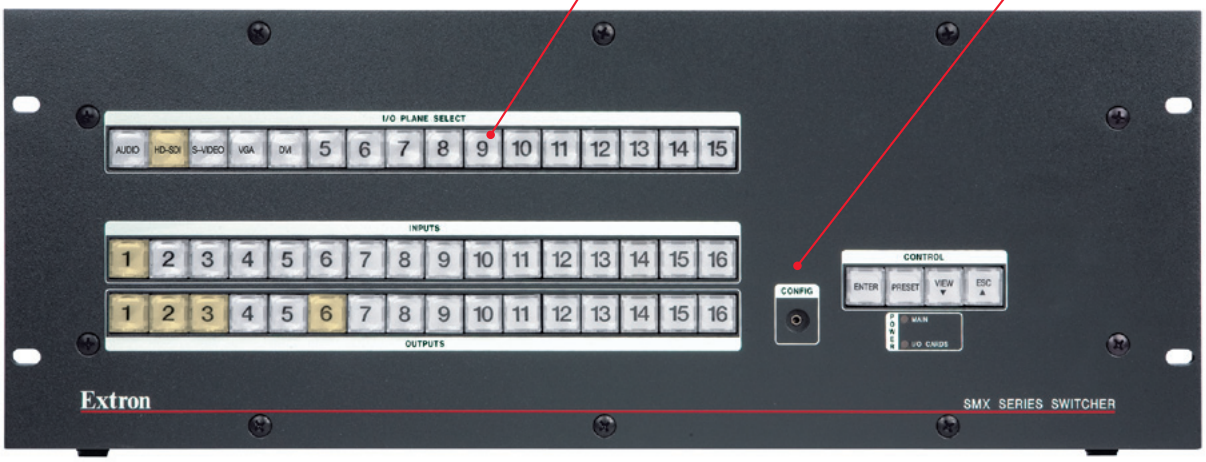
The SMX System MultiMatrix also requires significantly less rack space than a traditional, multiple switcher system. Many of the matrix boards require only one-half unit of rack space, allowing two separate switchers to be mounted in the same space as most small, standalone matrix switchers.

Overview

Single Point of Control
Select any of up to 10 separate switchers from the front control panel, RS-232, or IP Link

Back-lit Input/Output Selection Buttons
I/O selection and crosspoint ties are easily identifiable using back-lit buttons with clear overlay labels, enabling simple front panel operation

Configuration Port
The SMX MultiMatrix can be conveniently set up and configured after installation, using the front panel serial configuration port

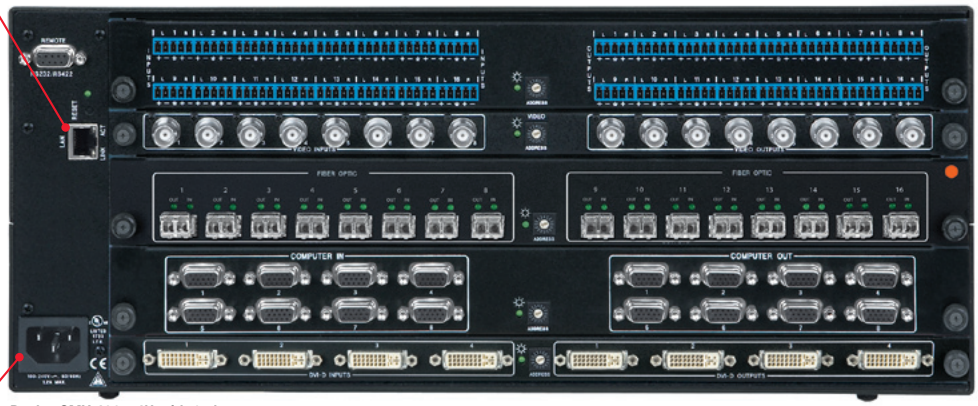


Front - SMX 400 - 4U with 8 slots

IP Link Ethernet control enables the SMX to be managed and proactively monitored from any authorized Web client

Hot-Swappable Back Plane
Matrix boards can be installed or removed at any time without disrupting other switcher planes

Truly Modular and Field-Configurable
Modular, multi-plane chassis design supports multiple, independent switchers in any configuration



Back - SMX 400 - 4U with 8 slots

Redundant Power Supply available
SMX frames are available with a redundant power supply for mission-critical applications.

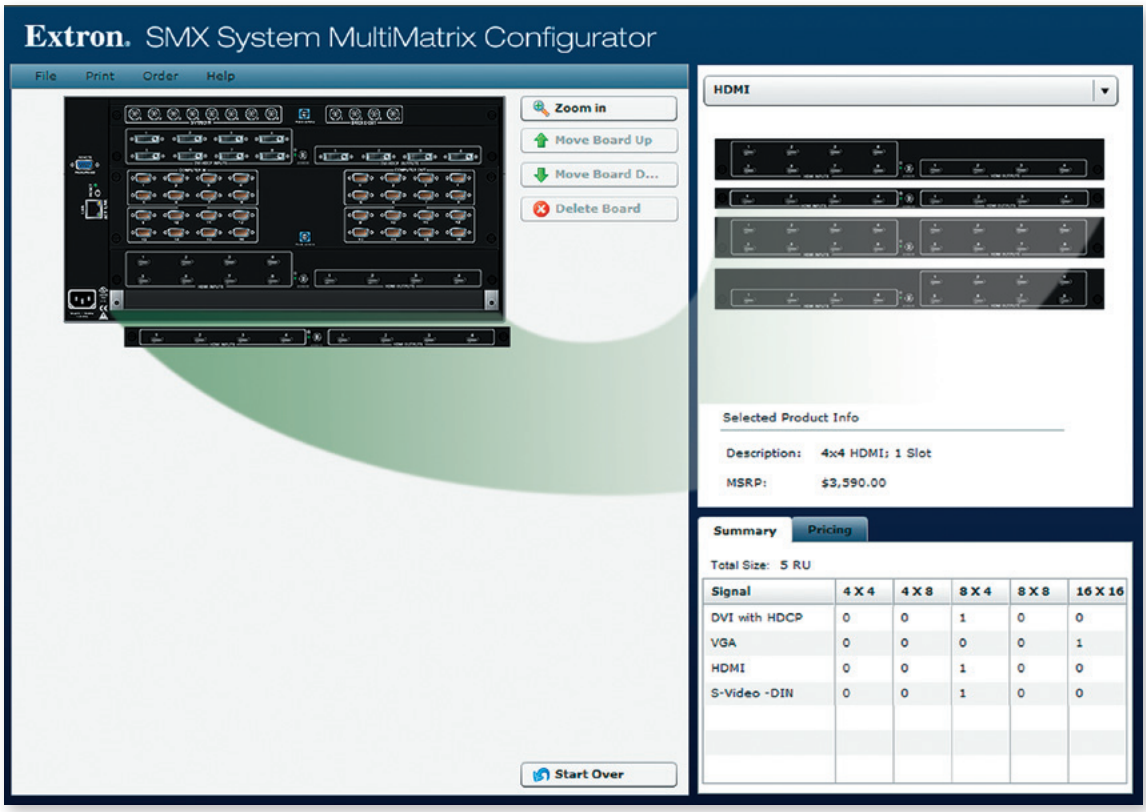
SMX 200 - 2U with 4 slots

SMX 300 - 3U with 6 slots

SMX 500 - 5U with 10 slots

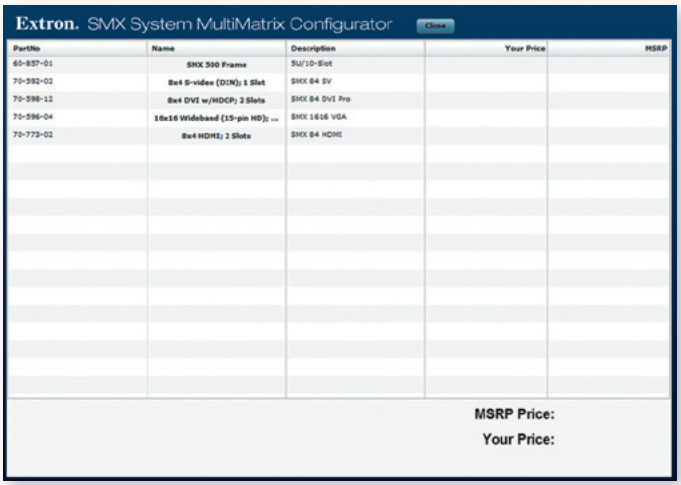
Online Configurator

The SMX Matrix Configurator is an online configuration utility that allows you to virtually configure different SMX switchers, with the click of a mouse, using the Extron Web site. The dynamic, graphical user interface makes system customization easy. As you configure each SMX, a running price total and bill of materials reflects the changes in your system design. You can save system designs for later recall, print the designs and bills of material, or export them to Microsoft Excel®. Extron resellers can order configured systems online through the Extron Reseller-only Web site. This simple yet powerful configuration tool makes it easy to create and purchase an SMX System MultiMatrix for virtually any analog or digital signal routing need.



The Web-Based SMX Matrix Configurator features:

- **Point-and-click or drag-and-drop simplicity** – Simply drag matrix boards into the frame and click to rearrange or delete
- **Dynamic parts list and price total** – Automatically maintains a list of the SMX frame and matrix boards selected, and a running total of the as-configured price
- **Single, as-built part number** – Provides a unique identifier for each SMX configuration you order, simplifying the process for future orders of the same configuration
- **Save and Recall** – Creates an as-configured drawing and bill of materials for system documentation of client approval requirements
- **Export to Excel** – SMX pricing and materials data can be exported to Microsoft Excel® for billing, tracking, or archive purposes
- **Order online** – Once configured to your specifications, the SMX System MultiMatrix can be ordered online through the Extron Reseller-only Web site



As each SMX is configured, a running price total and price list reflects the changes in the system design. System designs can be saved for later recall, printed, or exported to Microsoft Excel®. Extron resellers can order configured systems online through the Extron Reseller-only Web site.

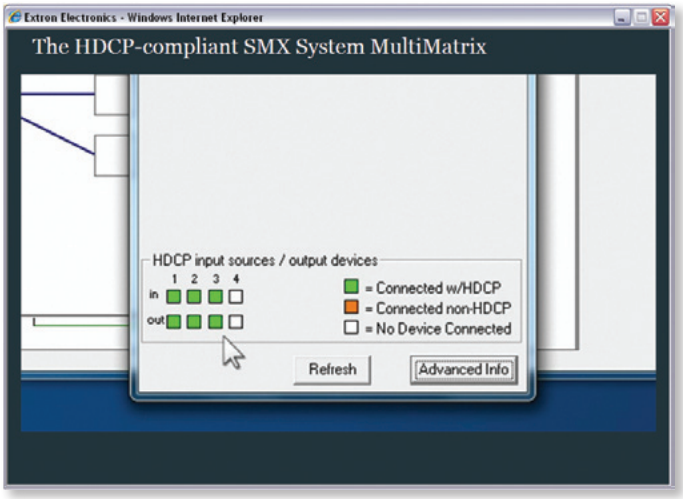
How it Works

The SMX System MultiMatrix is designed for fast, efficient installation and configuration, right out of the box. You can see the SMX switcher in action for yourself at **www.Extron.com/OutOfTheBox.**

Watch as a brand new SMX System MultiMatrix switcher is taken out of the box and put into full operation in just 15 minutes, with full HDCP compliance and quick source switching. The video provides simple, intuitive steps to configure the switcher and set up EDID management, install an HDCP-compliant DVI I/O board, and connect the sources and displays. It concludes with a demonstration of the SMX System MultiMatrix performing fast switches between a variety of sources and signal types.

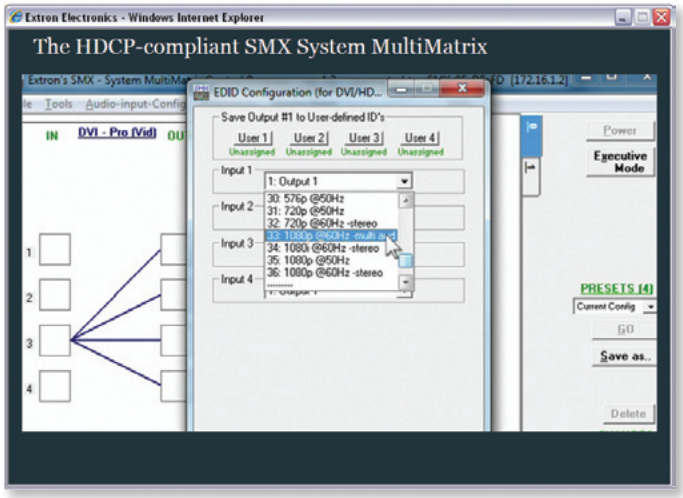
Matrix Board Installation

SMX matrix boards are hot-swappable and can be installed or replaced in three easy steps.



HDCP Status Reporting

HDCP status for connected sources and displays is immediately available to the installer for fast time-to-operation in any environment.



EDID management and configuration

The SMX Windows® Control Program provides for quick access to EDID – Enhanced Display Identification Data settings and parameters.

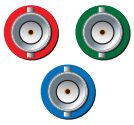
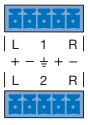
HDCP Visual Confirmation

SMX HDMI and DVI Pro matrix boards output a full-screen green signal when an HDMI-compliant source is connected to a non-HDCP compliant display, providing immediate visual confirmation that protected content cannot be viewed on the selected display.

SMX Matrix Boards

Matrix switcher boards are available to support a wide variety of video and audio signal formats. The SMX System MultiMatrix supports up to 10 independent matrix switchers, all under a single point of control.

SMX ANALOG MATRIX SWITCHER BOARDS

Signal Type	Description	I/O Size
Composite Video	**Composite Video Matrix Switcher Boards** • 150 MHz (-3 dB) video bandwidth, fully loaded • NTSC, PAL, and SECAM compatible • Video input signal detection • Vertical interval switching and genlock • Use three boards for analog component video up to 720p and 1080i	Model / Version / Part# SMX 84 V — 8x4 Composite video; 1 Slot — 70-591-02 SMX 88 V — 8x8 Composite video; 1 Slot — 70-591-03 SMX 1616 V — 16x16 Composite video; 2 Slots — 70-591-04
S-video	**S-video Matrix Switcher Boards** • 150 MHz (-3 dB) video bandwidth, fully loaded • NTSC, PAL, and SECAM compatible • Video input signal detection	Model / Version / Part# SMX 84 SV — 8x4 S-video (DIN); 1 Slot — 70-592-02 SMX 88 SV — 8x8 S-video (DIN); 1 Slot — 70-592-03 SMX 1616 SV — 16x16 S-video (DIN); 2 Slots — 70-592-04
S-video	**S-video (2 BNC) Matrix Switcher Boards** • 150 MHz (-3 dB) video bandwidth, fully loaded • NTSC, PAL, and SECAM compatible • Video input signal detection	Model / Version / Part# SMX 84 YC — 8x4 S-video (2 BNC); 2 Slots — 70-593-02 SMX 88 YC — 8x8 S-video (2 BNC); 2 Slots — 70-593-03 SMX 1616 YC — 16x16 S-video (2 BNC); 4 Slots — 70-593-04
VGA	**Wideband VGA Matrix Switcher Boards** • 350 MHz (-3 dB) RGB video bandwidth • Triple Action Switching™ for RGB delay • ADSP™ Advanced Digital Sync Processing technology • DSVP™ Digital Sync Validation Processing	Model / Version / Part# SMX 84 VGA — 8x4 Wideband (15-pin HD); 2 Slots — 70-596-02 SMX 88 VGA — 8x8 Wideband (15-pin HD); 2 Slots — 70-596-03 SMX 1616 VGA — 16x16 Wideband (15-pin HD); 4 Slots — 70-596-04
 Ultra-Wideband Video	**Ultra Wideband Matrix Switcher Boards** • 400 MHz (-3 dB) RGB video bandwidth • Triple Action Switching™ for RGB Delay • Use three boards for HD analog component video up to 1080p	Model / Version / Part# SMX 84 WB — 8x4 Wideband (BNC); 1 Slot — 70-594-02 SMX 88 WB — 8x8 Wideband (BNC); 1 Slot — 70-594-03 SMX 1616 WB — 16x16 Wideband (BNC); 2 Slots — 70-594-04
Sync	**Sync Matrix Switcher Boards** • Designed for RGBHV matrix switching applications • ADSP™ Advanced Digital Sync Processing technology • DSVP™ Digital Sync Validation Processing	Model / Version / Part# SMX 88 SYNC — 8x8 Single-channel Sync; 1 Slot — 70-595-03 SMX 1616 SYNC — 16x16 Single-channel Sync; 2 Slots — 70-595-04 SMX 88 H+V — 8x8 H+V Sync; 2 Slots — 70-595-05
 Stereo Audio	**Stereo Audio Matrix Switcher Boards** • Switches balanced or unbalanced stereo audio signals • Audio input gain and attenuation • Audio output volume adjustment and muting • Audio breakaway	Model / Version / Part# SMX 84 A — 8x4 Stereo Audio; 1 Slot — 70-599-02 SMX 88 A — 8x8 Stereo Audio; 1 Slot — 70-599-03 SMX 1616 A — 16x16 Stereo Audio; 2 Slots — 70-599-04

SMX Matrix Boards

SMX DIGITAL MATRIX SWITCHER BOARDS

Signal Type	Description	I/O Size
HD-SDI	**Multi-Rate Serial Digital Matrix Switcher Boards** • Complies with all SMPTE and ITU standards for Serial Digital video • Supports data rates from 19 Mbps to 2.97 Gbps, including 3G-SDI • Input equalization to 300 feet (100 m) or more • Automatic output reclocking	Model / Version / Part# SMX 44 HD-SDI / 4x4 Multi-Rate SDI; 1 Slot / 70-597-01 SMX 84 HD-SDI / 8x4 Multi-Rate SDI; 1 Slot / 70-597-02 SMX 88 HD-SDI / 8x8 Multi-Rate SDI; 1 Slot / 70-597-03 SMX 1616 HD-SDI / 16x16 Multi-Rate SDI; 2 Slots / 70-597-04
DVI	**DVI Matrix Switcher Boards** • Supports data rates to 4.95 Gbps - 1.65 Gbps per color • Supports computer-video to 1920x1200, HDTV to 1080p • EDID Minder® ensures that all sources power up properly and reliably output content to the displays • Automatic cable equalization for each input to 100 feet (30 meters) at 1920x1200/8-bit color when used with Extron DVI Pro cables • Automatic output reclocking enables signal transmission over long cables • Provides +5VDC, 250mA power on each output for external devices	Model / Version / Part# SMX 44 DVI / 4x4 DVI-D; 1 Slot / 70-598-01 SMX 48 DVI / 4x8 DVI-D; 2 Slots / 70-598-05 SMX 84 DVI / 8x4 DVI-D; 2 Slots / 70-598-02 SMX 88 DVI / 8x8 DVI-D; 2 Slots / 70-598-03
DVI Pro	**HDCP Compliant DVI Matrix Switcher Boards** • HDCP compliant • Supports HDMI specification features including data rates up to 6.75 Gbps, Deep Color up to 12-bit, 3D, and HD lossless audio formats • EDID Minder ensures that all sources power up properly and reliably output content to the displays • Key Minder™ continuously authenticates HDCP-compliant input and output devices to ensure quick and reliable switching • Automatic cable equalization for each input to 100 feet (30 meters) at 1920x1200/8-bit color when used with Extron DVI Pro cables • Automatic output reclocking enables signal transmission over long cables • Provides +5VDC, 250mA power on each output for external devices	Model / Version / Part# SMX 44 DVI Pro / 4x4 DVI-D/HDCP; 1 Slot / 70-598-11 SMX 48 DVI Pro / 4x8 DVI-D/HDCP; 2 Slots / 70-598-15 SMX 84 DVI Pro / 8x4 DVI-D/HDCP; 2 Slots / 70-598-12 SMX 88 DVI Pro / 8x8 DVI-D/HDCP; 2 Slots / 70-598-13
HDMI	**HDMI Matrix Switcher Boards** • HDCP compliant • Supports HDMI specification features including data rates up to 6.75 Gbps, Deep Color up to 12-bit, 3D, and HD lossless audio formats • EDID Minder ensures that all sources power up properly and reliably output content to the displays • Key Minder continuously authenticates HDCP-compliant input and output devices to ensure quick and reliable switching • Automatic cable equalization for each input to 100 feet (30 meters) at 1920x1200/8-bit color when used with Extron HDMI Pro cables • Automatic output reclocking enables signal transmission over long cables • Provides +5VDC, 250mA power on each output for external devices	Model / Version / Part# SMX 44 HDMI / 4x4 HDMI; 1 Slot / 70-773-01 SMX 48 HDMI / 4x8 HDMI; 2 Slots / 70-773-05 SMX 84 HDMI / 8x4 HDMI; 2 Slots / 70-773-02 SMX 88 HDMI / 8x8 HDMI; 2 Slots / 70-773-03
Fiber Optic	**Fiber Optic Matrix Switcher Boards** • Fully compatible with Extron FOX Series Fiber Optic Extender product line • High speed digital switching up to 4.25 Gbps • Input video signal detection • Alarm notification for input fiber link loss • Industry-standard LC connectors • MM - Multimode and SM - Singlemode versions available	Model / Version / Part# SMX 88 FOX MM / 8x8 Multimode; 1 Slot / 70-634-03 SMX 88 FOX SM / 8x8 Singlemode; 1 Slot / 70-635-03 SMX 1616 FOX MM / 16x16 Multimode; 2 Slots / 70-634-04 SMX 1616 FOX SM / 16x16 Singlemode; 2 Slots / 70-635-04
USB	**USB Matrix Switcher Boards** • USB 2.0 compatible • Supports data transfer rates up to 480 Mbps • Host and Peripheral Emulation for problem-free boot up • Four integrated two-port hubs • Provides +5VDC, 500mA power on each output port for attached keyboards, mice, or other peripheral devices	Model / Version / Part# SMX 44 USB / 4x4 USB; 1 Slot / 70-672-01 SMX 84 USB / 8x4 USB; 1 Slot / 70-672-02

Specifications

SMX Enclosures

CONTROL/REMOTE – SWITCHER HOST PORTS

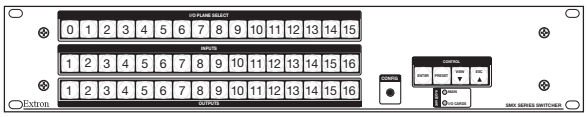
Serial host control port	1 bidirectional RS-232 or RS-422, rear panel 9-pin female D connector 1 bidirectional RS-232 front panel 2.5 mm mini stereo jack
Baud rate and protocol	9600 (default), 19200, 38400, 115200 baud (rear port only), adjustable; 8 data bits, 1 stop bit, no parity
Serial control pin configurations	
9-pin female D connector	
RS-232	2 = TX, 3 = RX, 5 = GND
RS-422	2 = TX-, 3 = RX-, 5 = GND, 7 = RX+, 8 = Tx+
Mini stereo jack RS-232	Tip = TX, ring = RX, sleeve = GND
Ethernet control port	1 RJ-45 female
Ethernet data rate (for network communication)	10/100Base-T, half/full duplex with autodetect
Ethernet protocol	ARP, DHCP, ICMP (ping), TCP/IP, Telnet, HTTP, SMTP
Web server	Up to 200 simultaneous sessions 7.0 MB nonvolatile user memory
Program control	Extron's control/configuration program for Windows® Extron's Simple Instruction Set (SIS™) Microsoft® Internet Explorer® ver. 6 or higher, Telnet

GENERAL

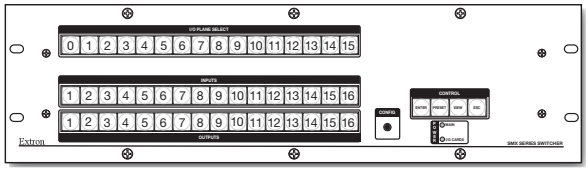
Power	100 VAC to 240 VAC, 50-60 Hz, 180 watts (200 watts with redundant power supply* installed), internal *A redundant power supply is available for some models.
Cooling	Fan, left to right (as viewed from front panel)
Rack mount	Yes
Enclosure type	Metal
Enclosure dimensions	(Depth excludes connectors. Width excludes rack ears.)
SMX 200 Frame	3.5" H x 17.0" W x 12.0" D (2U high, full rack wide) (8.9 cm H x 43.1 cm W x 30.5 cm D)
SMX 300 Frame	5.25" H x 17.0" W x 12" D (3U high, full rack wide) (13.3 cm H x 43.2 cm W x 30.5 cm D)
SMX 400 Frame	7.0" H x 17.0" W x 12" D (4U high, full rack wide) (17.8 cm H x 43.2 cm W x 30.5 cm D)
SMX 500 Frame	8.75" H x 17.0" W x 12" D (5U high, full rack wide) (22.2 cm H x 43.2 cm W x 30.5 cm D)
Product weight with boards installed	
SMX 200 Frame	16.2 lbs (7.3 kg)
SMX 300 Frame	18.1 lbs (8.2 kg)
SMX 400 Frame	20.3 lbs (9.2 kg)
SMX 500 Frame	23.9 lbs (10.8 kg)
Shipping weight with boards installed	
SMX 200 Frame	20 lbs (10 kg)
SMX 300 Frame	22 lbs (10 kg)
SMX 400 Frame	26 lbs (12 kg)
SMX 500 Frame	30 lbs (14 kg)
DIM weight with boards installed, all models	25 lbs (12 kg)
Regulatory compliance	
Safety	CE, c-UL, UL
EMI/EMC	CE, C-tick, FCC Class A, ICES, VCCI
MTBF	30,000 hours
Warranty	3 years parts and labor

NOTE: All nominal levels are at ±10%.

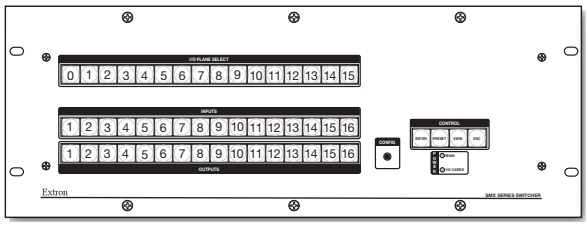
Model	Version Description	Part number
SMX 200 Frame	2U/4-Slot Frame	60-1021-01
SMX 200 Frame RPS	2U/4-Slot Frame with redundant power supply	60-1021-11
SMX 300 Frame	3U/6-Slot Frame	60-855-01
SMX 300 Frame RPS	3U/6-Slot Frame with redundant power supply	60-855-11
SMX 400 Frame	4U/8-Slot Frame	60-856-01
SMX 400 Frame RPS	4U/8-Slot Frame with redundant power supply	60-856-11
SMX 500 Frame	5U/10-Slot Frame	60-857-01
SMX 500 Frame RPS	5U/10-Slot Frame with redundant power supply	60-857-11



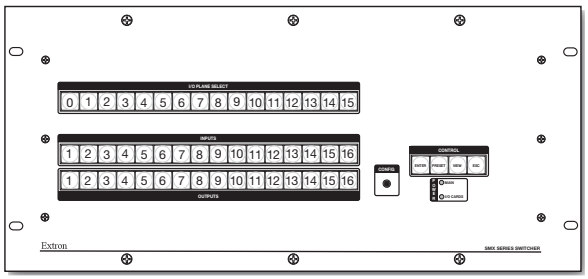
SMX 200 - 2U
Four Slots



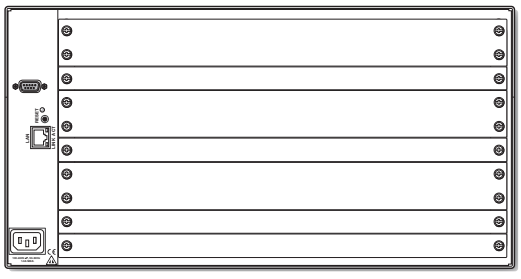
SMX 300 - 3U
Six Slots



SMX 400 - 4U
Eight Slots



SMX 500 - 5U
Ten Slots



SMX 500 Back

For complete specifications, please go to www.extron.com
Specifications are subject to change without notice.

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